

(12) United States Patent

Thakur et al.

(54) PERSISTENT DISPLAY OF NEAREST BEAT CHARACTERISTICS DURING REAL-TIME OR PLAY-BACK ELECTROPHYSIOLOGY **DATA VISUALIZATION**

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(56)References Cited

U.S. PATENT DOCUMENTS

4,649,924 A 3/1987 Taccardi 6/1987 Salo 4,674,518 A (Continued)

FOREIGN PATENT DOCUMENTS

1253761 A 5/2000 CN $\overline{\text{CN}}$ 102917638 A 2/2013 (Continued)

OTHER PUBLICATIONS

He, Ye H., "An interactive graphical system for automated mapping and display of cardiac rhythms", Journal of Electrocardiology, vol. 32, No. 3, Jul. 1, 1999, pp. 225-241.

(Continued)

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(57)**ABSTRACT**

A system and method for mapping an anatomical structure includes sensing activation signals of intrinsic physiological activity with a plurality of electrodes disposed in or near the anatomical structure. A most recent intrinsic event at a selected time is determined based on the sensed activation signals and a persistent display of relevant characteristics is generated based on the sensed activation signals of the most recent intrinsic event. The persistent display is updated upon detection of a subsequent intrinsic event.

11 Claims, 5 Drawing Sheets

